

CLASSIFYING CELLS BASED ON INFORMATION CONTAINED IN CELL IMAGES

ABSTRACT OF THE DISCLOSURE

Image analysis methods analyze images of cells and place the cells in particular cell cycle phases based upon certain features extracted from the images. The methods can also quantify the total amount of DNA in a cell based on specific features such as fluorescence intensity from fluorescent molecules that bind to DNA. Further, the methods can characterize a cell as mitotic or interphase based on chosen parameters such as the variance in intensity observed in a cell image and/or the size of a region containing DNA. In one example, image analysis methods can classify the cell into one of the following five phases: G_1 , S, G_2 , telophase, and an early stage mitotic phase comprised of prophase, metaphase, and anaphase.